

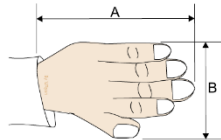
# Y9 Knowledge Organiser - Graphics

## What are ANTHROPOMETRICS ?

The study of the human body and its movement, often involving research into measurements relating to people. It also involves collecting statistics or measurements relevant to the human body, called Anthropometric Data. The data is usually displayed as a table of results, diagram or graph. Anthropometric data is used by designers and architects.

ANTHROPOMETRIC DATA		
PUPIL/PERSON	A	B
Child A	103mm	53mm
Child B	103mm	46mm
Child C	90mm	47mm
Child D	95mm	44mm
Child E	102mm	50mm
Child F	87mm	41mm
Child G	75mm	43mm
Child H	102mm	51mm
Child I	104mm	51mm
Child J	74mm	36mm
Child K	78mm	46mm
Child L	81mm	30mm
<b>TOTAL(S)</b>	<b>1091mm</b>	<b>546mm</b>
<b>AVERAGE</b>	<b>90.9mm</b>	<b>45.5mm</b>

DATA APPLIED TO THE HAND - ERGONOMICS

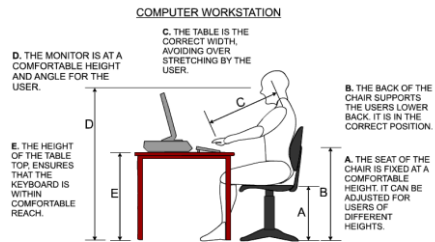


## What are ERGONOMICS?

The study of people and their relationship with the environment around them.

Measurements, also known as 'anthropometric data', are collected and applied to designs / products, to make them more comfortable to use. The application of measurements to products, in order to improve their human use, is called Ergonomics.

The diagram below shows, a table of anthropometric data (measurements) and how these are applied to the hand.



## Scales of Production

SCALE OF PRODUCTION	SAMPLE PRODUCTS	DESCRIPTION / DETAIL
CONTINUOUS	CARS PETROL / OIL PRODUCTS BRICKS MANY FOOD PRODUCTS	1. PRODUCTION LINE SET UP 2. PRODUCTION LINE SPLIT INTO SEPARATE OPERATIONS. UNSKILLED AND SEMI SKILLED WORKFORCE REQUIRED. 3. PRODUCTION LINE RUNS 24 HOURS A DAY 365 DAYS A YEAR. 4. HIGH LEVEL OF FINANCIAL INVESTMENT NEEDED AS SPECIALIST MACHINERY IS USUALLY REQUIRED. 5. QUALITY CONTROL AT EVERY STAGE.

SCALE OF PRODUCTION	SAMPLE PRODUCTS	DESCRIPTION / DETAIL
BATCH	FURNITURE ELECTRICAL GOODS CLOTHING NEWSPAPERS BOOKS	1. FLEXIBLE PRODUCTION LINE SET UP - MUST B E ABLE TO CHANGE WHEN THE PRODUCT CHANGES 2. PRODUCTION LINE SPLIT INTO SEPARATE OPERATIONS. UNSKILLED AND SEMI SKILLED 3. PRODUCTION LINE RUNS FOR A SPECIFIED AMOUNT OF TIME UNTIL THE CORRECT NUMBER OF PRODUCTS HAVE BEEN MANUFACTURED 4. WORKFORCE FLEXIBILITY REQUIRED. WORKERS MUST BE ABLE TO SWITCH FROM ONE JOB TO ANOTHER. 5. OFTEN COMPONENTS ARE BOUGHT FROM OTHER COMPANIES AND ASSEMBLED INTO THE NEW PRODUCT

SCALE OF PRODUCTION	SAMPLE PRODUCTS	DESCRIPTION / DETAIL
SINGLE ITEM / ONE OFF	PROTOTYPES SPECIALIST MODELS HANDMADE ITEMS SPECIALIST ENGINEERING ONE OFFS	1. SMALL SPECIALIST COMPANIES. 2. A SKILLED WORKFORCE - SPECIALIST SKILLS eg. ENGINEERING. 3. SPECIALIST MATERIALS OFTEN REQUIRED eg. SPECIALIST MODELLING MATERIALS. 4. HIGH QUALITY PRODUCTS MANUFACTURED. 5. FINAL PRODUCTS OFTEN EXPENSIVE DUE LEVEL OF SKILL REQUIRED TO MANUFACTURE THEM AND COST OF SPECIALIST MATERIALS. 6. A HIGH STANDARD OF QUALITY CONTROL 7. PRODUCTS MANUFACTURED FOR AS SPECIALIST MARKET / CLIENTELE.



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**CARTRIDGE PAPER** - is used for general drawing. It is often good quality and generally 100 to 135g in thickness. This paper is used for design and technology projects and will take colour from pencils and felt pens without too much leaking to the opposite side of the paper.



**DUPLEX BOARD** - This is used for containers and can contain liquids as it may have a water-proof liner on the inside. It can have a wax feel. This type of card is used by the food industry and consequently recycled card is not used in its manufacture.



**SOLID WHITE BOARD** - This is normally top quality cardboard made from quality bleached wood pulp. It is the best card for printing on to and consequently it is used for hard backed books and more expensive items.



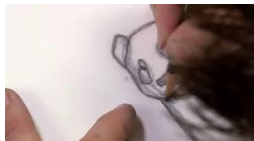
**CORRUGATED BOARD** - This type of board is often used for packaging large electrical items. These large boxes (often brown in colour) protect the contents from damage. Corrugated board is strong because it is composed of a top and bottom layer and in between there is a triangulated section. A triangular section is very strong compared to its weight.



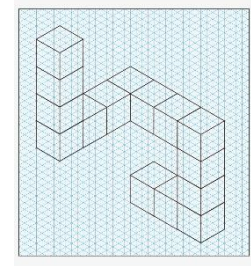
**FOIL LINED BOARD** - is good quality cardboard with a aluminium foil lining. This type of container is ideal for ready made meals or take away meals. The foil retains the heat and helps keep the food warm.



**TRACING PAPER** - Is used pupils, students and designers. It allows the designer to copy an existing drawing / shape. Tracing paper can be useful when there is a need to produce several drawings that are based on the same outline. Also, tracing paper makes it possible to place one design on top of another to produce a second layer. The original design can be seen under the second drawing.



**GRID/ISOMETRIC PAPER** - Is manufactured in a range of patterns, the most common being isometric and square grids. This type of layout helps when drawing in three dimensions (isometric) or drawing graphs and pictograms (graph paper). Standard 80gsm



**INK JET CARD** - A high quality paper, often used when a photograph is printed. The surface is normally gloss or matt, in texture. It is relatively expensive compared to cartridge or photocopying paper. 120 to 400gsm



**LAYOUT PAPER** - Is used by architects, designers and artists, to lay over the top of an existing drawing, in order to copy parts / aspects. Sometimes a designer will draw individual elements of a product, on separate sheets of layout paper. When put together, the various layers appear as one. This approach can be useful, when removing layers, to simplify a design or to show limited detail. 40 to 60gsm



**BLEED PROOF PAPER** - does not allow felt pens / ink pens (water or spirit based), to spread / bleed through or across the surface. When a felt pen or ink pen is used on the surface of cartridge paper, accuracy can be lost, as the ink is absorbed and spreads out, leaving an inaccurate line. Bleed proof paper has a coating that prevents this happening, leaving an accurate / precise line. 70gsm



A TYPICAL BLEED LINE ON CARTRIDGE PAPER



A PRECISE LINE ON BLEED PROOF PAPER